

## **REMARKS**

Applicant respectfully thanks the Examiner for considering the references cited in the Information Disclosure Statement filed on June 18, 2003, as evidenced by the signed form PTO-1449.

Upon entry of this amendment, claims 1-43 are pending in this application. Claims 41-43 have been added. No new matter is included. In view of the foregoing amendments and the following remarks, reconsideration and allowance of all claims pending in this application are respectfully requested.

### **Claim Rejections under 35 U.S.C. §103**

Claims 1-40 stand rejected under 35 U.S.C. §103(a) as allegedly being obvious over Shibamiya et al. (U.S. Patent No. 4,956,774). Applicant respectfully traverses this rejection on the following basis.

Independent claims 1, 11, 21, and 31 have been amended to essentially recite the features of receiving a request for data associated with a requested hierarchical data list, wherein the request includes a predetermined tolerance and predetermined units; generating a first statistical curve from data values derived from the requested data and the predetermined tolerance; searching at least one object store having at least one stored hierarchical data list for data that matches the data associated with the requested hierarchical data list. At least these features are not taught or suggested by Shibamiya.

In the claimed invention, the request for data is associated with a hierarchical data list that is contained within a database. In an exemplary embodiment, the request for data is received for one or more hierarchical data lists (HDLs) stored in a hierarchical database (see specification at page 32, lines 24-25 and Fig. 5).

The Examiner acknowledges that Shibamiya does not explicitly disclose hierarchical data (see Page 4, number paragraph 7 of the Office Action). However, the Examiner takes the position that Shibamiya teaches "a method suggesting a B-tree for storing index's pages" (see Page 4, number paragraph 7 of the Office Action). Applicant respectfully submits that this portion of Shibamiya merely discloses an index

page that may have a hierarchical structure to enable more efficient scanning in a relational database system and is not directed to searching the data within a hierarchical database. Even if the Examiner interprets the B-tree to be a hierarchical structure, Shibamiya remains deficient because the B-tree represents a hierarchical structure for an index of entries for the relational database rather than entries in the relational database.

Based on at least this difference between the claimed invention and Shibamiya, Applicant respectfully submits that there is no support for the Examiner's position that Shibamiya teaches "receiving a request for data associated with a requested hierarchical data list (See col. 4, lines 35-63, and col.5, lines 11-14), wherein the request includes a predetermined tolerance and predetermined units (See Fig. 1, elements 12, and 16, col.3, line 66 through col.4, line 5, col.5, lines 16-18, and col.6, lines 17-19);" and "searching at least one object store having at least one stored hierarchical data list (See col.2, lines 34-50, and col.25, line 52 through col.26, line 10) for data that matches the data associated with the requested hierarchical data list (See Col.1, lines 48-50, col.2, lines 34-38, and col.5, lines 3-7)" (see Page 4, number paragraph 7 of the Office Action). Rather, Shibamiya discloses a method for receiving a search request and selecting a query's access path in a relational data base management system that uses the frequency of occurrence statistics to calculate the number of rows matching a search criterion that appears within a data base request and corresponds to the index (see Shibamiya, col. 3, lines 61-63 and col. 5, lines 3-7). The collected statistics are utilized by the optimizer to estimate the time required to use each of the various access paths available to satisfy each query (see Shibamiya, col. 6, lines 8-12). The optimizer can choose between a sequential table scan through the entire table or an index scan using an index corresponding to one of the query's search criteria (see Shibamiya, col. 18, lines 38-42). Applicant submits that neither of the optimizer's two choices of a sequential table scan or an index scan involve searching hierarchical data within the database. The optimizer's index scan is deficient because an index scan involves searching index entries only, not searching data within the

database. Even if Shibamiya discloses searching among B-tree index entries or scanning every row in a relational database, the reference is deficient because it fails to disclose or suggest searching at least one object store having at least one stored hierarchical data list for data that matches the data associated with the requested hierarchical data.

Furthermore, the independent claims recite generating a first statistical curve from data values derived from the requested data and the predetermined tolerance. In an exemplary embodiment, a user may request objects describing brick that has a weight of five (5) pounds plus or minus five (5) percent (see specification at page 22, lines 19-20). A statistical curve is generated corresponding to the requested data value and the specified tolerance (see specification at page 23, lines 6-9).

In contrast, although Shibamiya appears to enable a user to enter queries including search criteria with ">", "<", and "BETWEEN" operators (see Shibamiya col. 25, lines 66-67), Shibamiya does not disclose generating a first statistical curve from data values and the predetermined tolerances derived from the requested data. Rather, the "curve" in Shibamiya is a histogram for selecting access paths to distributed data, based on the number of occurrences of index key values (see Shibamiya col. 3, lines 20-37). Statistics on the frequency of occurrence of selected values are collected and an estimate of time required to use the index as the access path is made, based on the most frequency occurring values statistics (see Shibamiya col. 3, lines 66- col. 4, line 3). Applicant respectfully submits that Shibamiya is not determining a first statistical curve from data values and the predetermined tolerance, rather Shibamiya is using index value occurrence statistics, that may be plotted as a histogram, to determine access times for different paths.

For at least the foregoing reasons, Applicant respectfully submits that claims 1, 11, 21, and 31 are patentable over Shibamiya. Furthermore, claims 2-10, 12-20, 22-30, and 32-40 are patentable at least by virtue of their dependency.

New claim 41 was added to recite the features of claims 1 and 2, new claim 42 was added to recite the features of claims 11 and 12, and new claim 43 was added to

recite the features of claims 1-3. Independent claims 41-43 recite the step of generating a first statistical curve for the requested hierarchical data list and generating a second statistical curve for the at least one stored hierarchical data lists, among other things. The Examiner relies on the abstract lines 10-13, col. 3, lines 23-45, and Fig. 2 of Shibamiya to teach this feature. In particular, the Examiner states that "Shibamiya teaches an optimizer database using most frequent values statistics wherein the query's search criteria specify values which are assumed to be uniformly distributed", (see Page 5, paragraph 7 of the Office Action). The Examiner then asserts that "Shibamiya teaches a statistical curve and from the given data a second statistical curve can be determined." Applicant respectfully submits that there is no support in Shibamiya for the assertion that "a second statistical curve may be determined". Even if Shibamiya discloses generating a histogram for the index that corresponds to the frequency value statistics, the Shibamiya is deficient because it fails to disclose or suggest determining a second curve for the at least one stored hierarchical data lists associated with the data in the databases.

Therefore, the new claims are patentable over Shibamiya.

Having addressed each of the foregoing rejections, it is respectfully submitted that a full and complete response has been made to the Office Action and, as such, the application is in condition for allowance. Notice to that effect is respectfully requested.

Customer Number  
29315

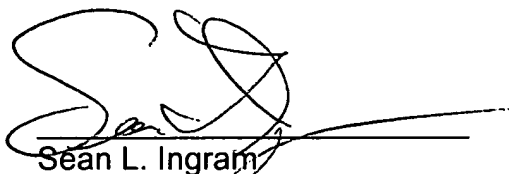
Application Serial No.: 09/750,317  
Attorney Docket No.: 23452-122  
Reply and Amendment Under 37 C.F.R. §1.111

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Dated: December 4, 2003

Respectfully submitted,

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A handwritten signature in black ink, appearing to read 'Sean L. Ingram', is written over a horizontal line.

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